

## B R E V I O R A

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SOUTH AMERICAN *ANOLIS*:  
*ANOLIS IBAGUE*, NEW SPECIES OF THE  
*PENTAPRION* GROUP FROM COLOMBIAERNEST E. WILLIAMS<sup>1</sup>

ABSTRACT. *Anolis ibague*, new species, is described on the basis of a single juvenile female. It is regarded as a distinctive peripheral member of the *Anolis pentaprion* group.

In a series of *Anolis antonii* received from the Vienna Museum is a single small female anole with quite distinctive head and dorsal scalation. It is clearly new and I name it after the locality at which it was collected:

*Anolis ibague*, new species

*Holotype*: Vienna 18942:38; a juvenile female.

*Type locality*: Ibague, Dto Tolima, Colombia.

*Head*. Head scales smooth, imbricate, those in frontal depression larger than any on the snout. Scales across snout between second canthals 8. 8 scales border rostral posteriorly. Anterior and inferior nasal scales in contact with rostral. Six swollen but narrow scales between supranasals.

Scales of supraorbital semicircles very broadly in contact, all very large, the second and third pair relatively larger, the third pair in contact with the enormous interparietal. Scales of supraocular disk about 16 in number, smooth, in contact with supraorbital semicircles. Supraciliaries elongate, single, followed by granular scales. Six canthal scales, canthus falling well short of nostril, separated by swollen subgranular scales. Five loreal rows,

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uppermost and lowermost largest. Temporal and supratemporal scales subgranular, not swollen. No differentiated supratemporal line. Supratemporal scales gradually enlarging toward the interparietal, with the scales immediately lateral and anterolateral to the interparietal very large. One row of large scales posterior to the interparietal immediately followed by scales similar to those of the back.

Suboculars in contact with supralabials. 6–7 supralabials to the center of the eye.

Mental wider than long, in contact with only two small scales between the very large sublabials. Four sublabials on each side in contact with the infralabials.

Throat and anterior chin scales between the sublabials laterally large, becoming smaller centrally and posteriorly.

*Trunk.* Middorsal scales slightly larger than the lateral granules. Lateral granules becoming larger, merging into the much larger smooth and imbricate ventrals.

*Dewlap* (juv. ♀). Absent. The merest indication in a very small central fold, the scales *not* enlarged.

*Limbs and digits.* Scales of upper arm, front of thigh and lower leg smooth. Those of lower arm unicarinate. Those of digits weakly multicarinate. 19 lamellae under phalanges ii and iii of 4th toe.

*Tail.* Compressed. No enlarged postanals. No tail crest, a double line of weakly keeled scales middorsally. Most ventral tail scales more distinctly keeled but scales immediately behind vent smooth.

*Color.* A white middorsal zone diminishing to a point on the occiput but continuing on tail. Head dark, vaguely marked with lighter. Flanks light purplish, spotted and flecked with darker purple. Belly and throat lighter, the throat spotted, the belly more indistinctly tinged with darker.

## COMPARISONS

The affinities of *Anolis ibague* would appear to lie with those beta anoles with smooth ventrals, suboculars in contact with supralabials and counts of fourth toe lamellae between 15 and 20.

On the one hand this would appear to ally *ibague* with the *fuscoauratus* complex, and it is in fact sympatric, perhaps syntopic, with one member of this series—*antonii*. Not surprisingly, *A. ibague* more closely resembles a species not sympatric with it,

*A. orton*i, a species widely distributed throughout Amazonia. *A. orton*i approaches *A. ibague* in its large interparietal and its supraorbital semicircles in contact. It differs in having small scales, like those of the dorsum, behind the interparietal. *A. orton*i resembles *A. ibague* in the presence of a middorsal light stripe in the female. (This, however, is a character frequently present in female anoles, even in very distantly related species.) It differs in a tendency to a higher number of loreal rows and in having the scales immediately behind the interparietal small like the dorsals. Neither the resemblances nor the differences are unique or special.

There appear to be greater resemblances to the *pentaprion* group which has now been described in some detail by C. W. Myers (1971) with the description of two new species and the restoration from synonymy of a third.

Myers has defined the *pentaprion* group in the following terms: "Beta anoles of small to moderately large size, relatively short legs (appressed hind limbs usually failing to reach ear, never reaching eye); digital pads dilated, with distal phalanx raised from the dilated pad; low loreal region (maximum of 2–5 horizontal scale rows); black throat lining and parietal peritoneum; a bluish gray or blue-covered sliver of tissue at the corner of the mouth; few rows of scales on dewlap of relatively persistent (i.e. fade resistant in preservative) red or purple coloration; tendency for lichenose or fungous color pattern (in two of three species); no vertebral stripe; tendency for smooth scales over most of the head and body; relatively small dorsal and ventral trunk granules; ventral granules tending to obliquely conical (ontogenetic change to flat and imbricate in one species)."

Some of these characters cannot be determined in the unique preserved type, and others do not apply. However, Myers has already been forced to acknowledge occasional exceptions to his character list, and some characters such as the absence of a vertebral stripe in the female are the sort of characters that are provisionally accepted as part of a group definition in a small sample of species but are discarded without hesitation if the ensemble of characters proves that a species belongs in a group. The light vertebral streak has apparently been evolved many times within the genus *Anolis*, and its appearance in yet another species, whatever its relationships, causes no surprise.

I would place especial reliance on some of Myers' characters and add certain others. Thus, smooth scales on head and body



are at one end of a spectrum that in the genus as a whole varies from completely smooth to rugose and heavily keeled. In any small set of closely related species, smooth scales are likely to be consistent. Similarly likely to be good group characters are low loreal counts (lower than 6) and short limbs.

Quite as useful — ordinarily — are contact between suboculars and supralabials and low counts across the snout between posterior canthals ( $<10$ ). In some species there is considerable variability in these regards; more often these two conditions are reliable group characters.

In these features in which I would place considerable confidence — they are more distinctive within the beta section of *Anolis* than in alphas — *A. ibague* fits the *pentaprion* group.

## DISCUSSION

The single individual described above seems to be a *juvenile* female. As such it will not appear to be the best material on which to base a new taxon. Barbour (1934) has commented: "It is most unfortunate to describe *Anolis* from single female specimens as also Boulenger did on all too many occasions."

Barbour's philosophy, widely shared, rests upon the general proposition that male *Anolis* are often more distinctive in both scale and color characters than females of their species. This is undoubtedly true. Underwood and Williams (1959), speaking of Jamaican anoles, said: "The males of the various forms are far more clearly differentiated than the females. The possession of a fan by the male contributes to this, but the color of pattern of the males is always more distinctive. In some cases females are almost impossible to distinguish . . . Descriptions of species founded only on female material are of limited value."

Again the truth of this for Jamaican animals would be difficult to deny, but they represent a small radiation that, despite significant differences in ecology and size, is still remarkably close knit. In similar mini-radiations of anoles it is often true that the color patterns and the spectacular dewlaps of males may be, like the voices of male frogs, the major way in which the species tell themselves apart.

However, in this, as in so many cases, no rigid rules apply. The variability of each group and subgroup is peculiar to itself alone and must be empirically determined. Males are in anoles the sex of choice for species descriptions, but sex dimorphism in

anoles does not go so far that valid species *cannot* be recognized on females alone. Sexual dimorphism in *Anolis* is most often evident in color and size, much more rarely in the general characters of scalation. Aspects of morphology most probably associated with social interaction and display — dewlaps, the probosci of proboscis anoles, tail crests, etc. — are apt to be sexually dimorphic. Sometimes there may be differences in head scales but these are minor, e.g., greater keeling of all head scales in females than in males, as in *females* of the *Anolis homolechis* series of Cuba. In no case are scale differences of the kind that would permit belief that male and female are quite distinct species; at most they are differences of the kind that could be expected to occur between males of very closely related, doubtfully distinct species.

Color differences are often more radical, but here in anoles sharp differences may occur as morphs within well-understood species or even, not at all unusually, between phases in the same individual.

In any case, the problem of *Anolis ibague* is not that it is rather characterless or differs only in subtleties from any other anole. On the contrary, its characters are extreme for its group and relatively extreme within anoles.

The characters of *A. ibague* that are extreme are the great size of the interparietal, of certain of the supraorbital scales, and of the sublabials.

The size of these scales in the *juvenile* type specimen may well be more extreme than in adults of the species. Some head scales are often relatively larger in very young specimens of any species. But, although the enlargement of certain head scales is greater in *ibague* than in any related species, and these scales are at one end of the curve of head scale variation for the genus *Anolis* as a whole, they are, however, nearer the taxonomic norm for such iguanid genera as sceloporines or tropidurines, for which a huge interparietal and large supraorbital scales are in fact partly diagnostic. There is nothing anomalous about these conditions: they are merely highly derived character states.

The discussion of relationship above has suggested that *ibague* is a local representative in central Colombia of a group — the *pentaprion* group — otherwise unknown there. Special peculiarity in a peripheral isolate is not unusual; it seems the preferable explanation of the exceptional features of this species.

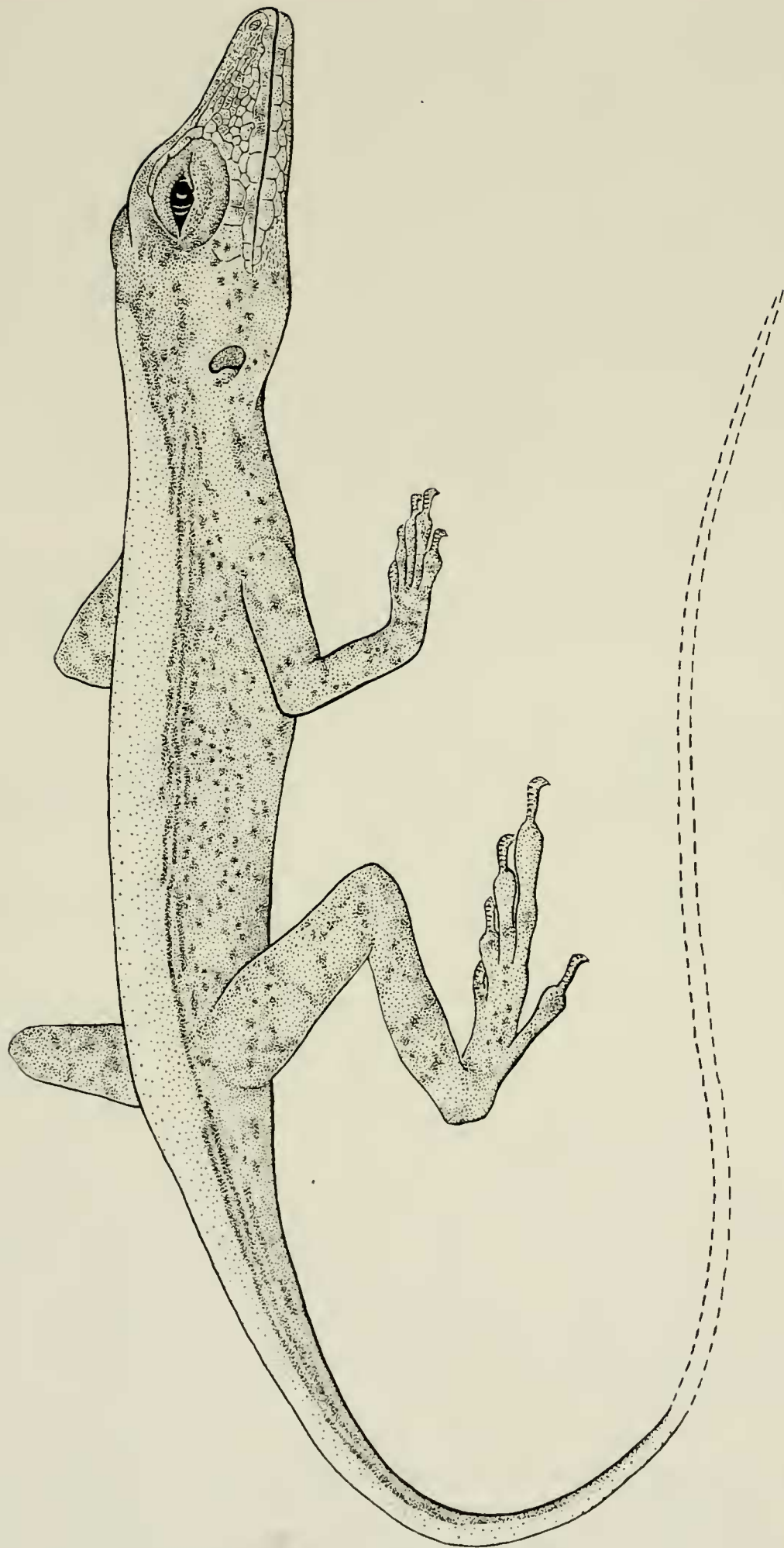


Fig. 1. *Anolis ibague* Type. Lateral view to show pattern.



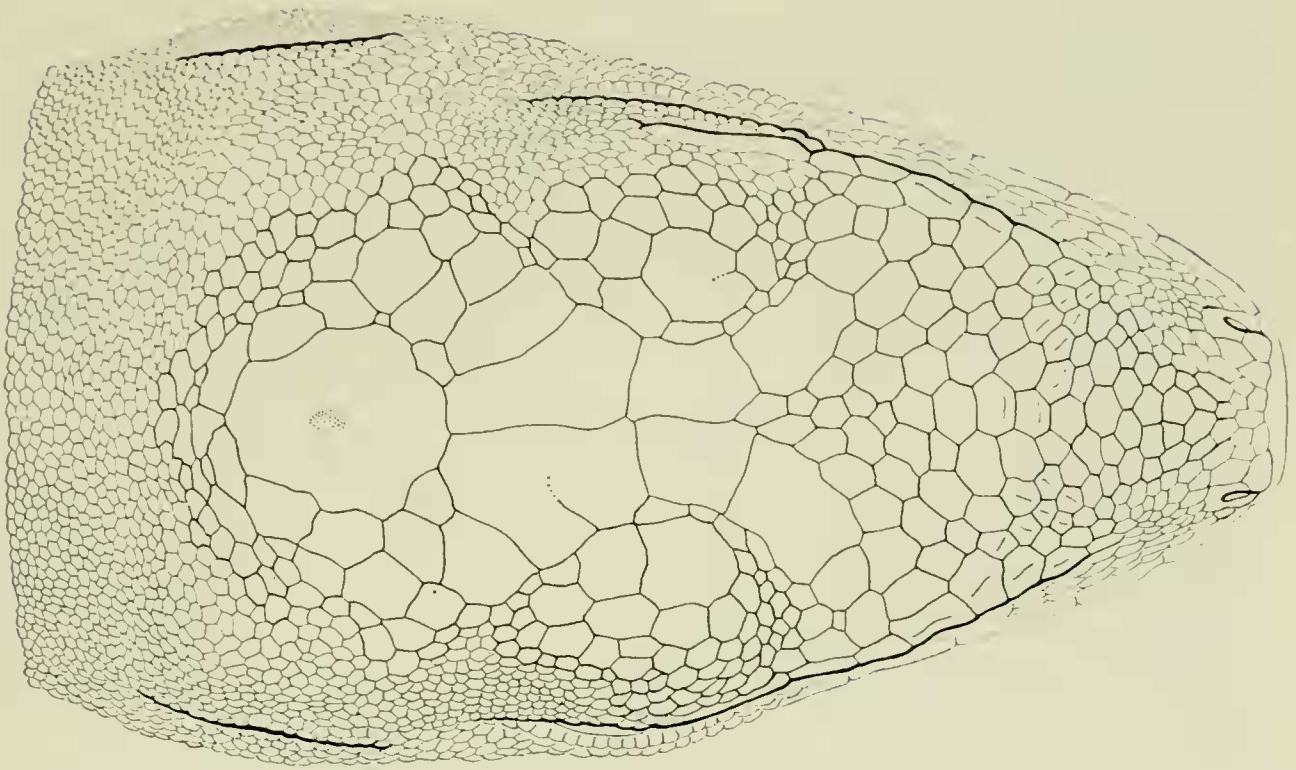


Fig. 2. *Anolis ibague* Type. Dorsal view of head scales.

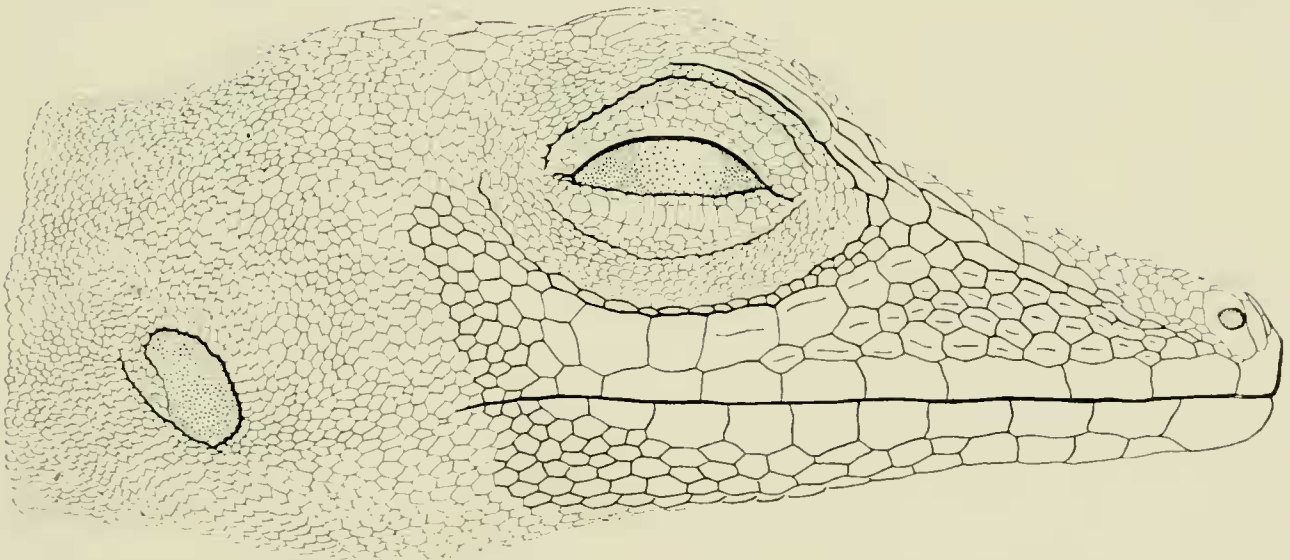


Fig. 3. *Anolis ibague* Type. Lateral view of head scales.

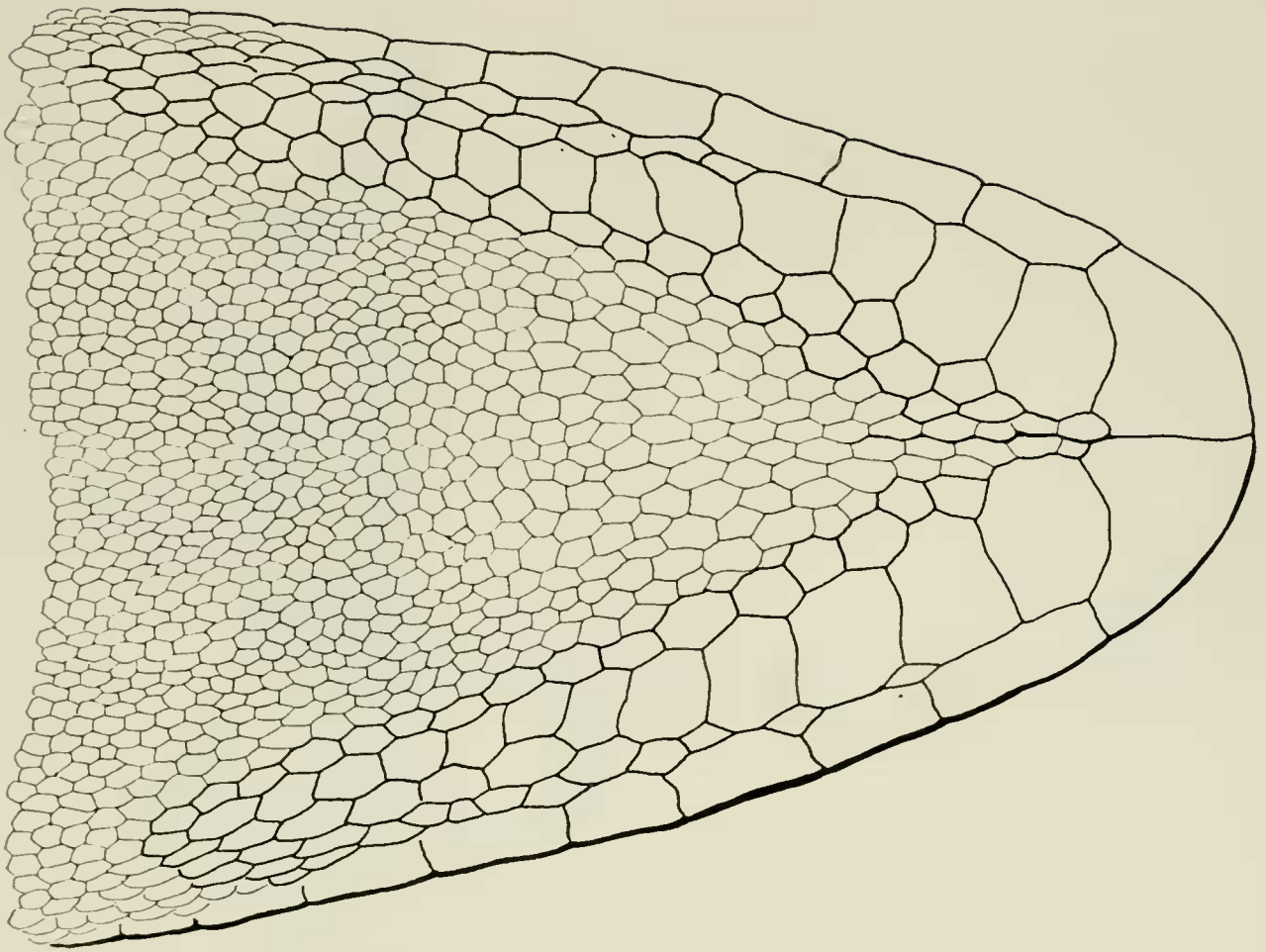


Fig. 4. *Anolis ibague* Type. Ventral view of chin scales.



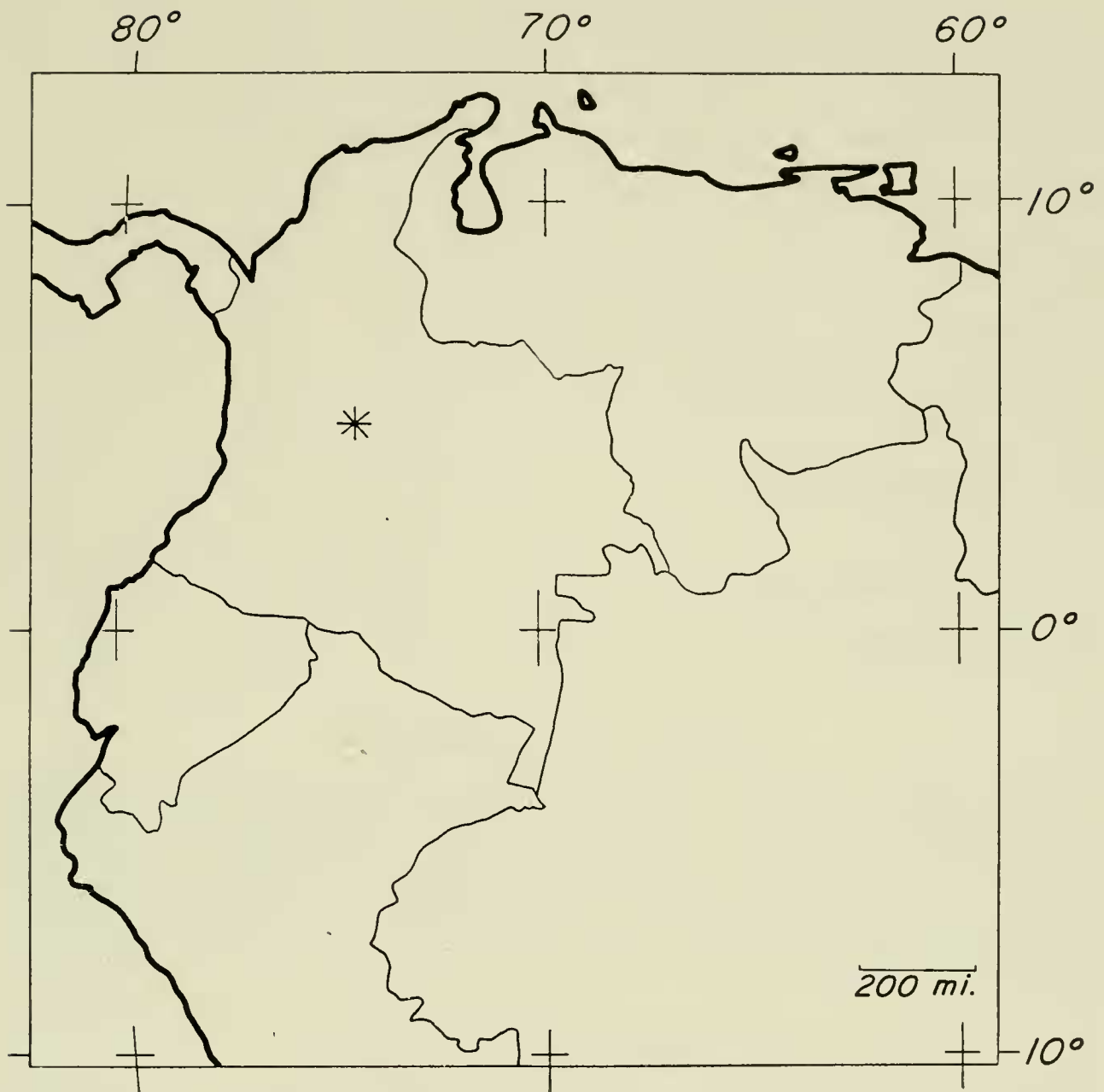


Fig. 5. Asterisk indicates type locality of *A. ibague*.

Table 1. Scale characters of *A. ibague* compared.

	<i>ibague</i>	<i>sulcifrons</i>	<i>fungosus</i>	<i>vociferans</i>	<i>pentaprion</i>
scales across snout	10	8	7	7-13	7-14
scales between semicircles	0	0	1-2	0-2	0-2
loreal rows	5	5	3	3-5	2-5
interparietal/ear	>	>	>	>	>
scales between interparietal and semicircles	0	1	1-3	2	1-3
scales between suboculars and supralabials	0	0	0	0	0
supralabials to center of eye	6	6	7-8	6-8	7-10
fourth toe lamellae	17	18	17	18	19-24

## ACKNOWLEDGMENTS

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